Exploring the qualities of midwifery-led continuity of care in Australia (MiLCCA) using the quality maternal and newborn care framework

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Published in:
Women and Birth

DOI:
10.1016/j.wombi.2019.03.013

Publication date:
2020

Exploring the qualities of Midwifery-led Continuity of Care in Australia (MiLCCA) using the Quality Maternal and Newborn Care Framework.

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ABSTRACT

Problem: Midwifery-led continuity of care has well documented evidence of benefits for mothers and babies, however uptake of these models by Australian maternity services has been slow.

Background: It is estimated that only 10% of women have access to midwifery-led continuity of care in Australia. The Quality Maternal Newborn Care (QMNC) Framework has been developed as a way to implement and upscale health systems that meet the needs of childbearing women and their infants. The Framework can be used to explore the qualities of existing maternity services.

Aim: We aimed to use the QMNC Framework to explore the qualities of midwifery-led continuity of care in two distinct settings in Australia with recommendations for replication of the model in similar settings.

Methods: Data were collected from services users and service providers via focus groups. Thematic analysis was used to develop initial findings that were then mapped back to the QMNC Framework.

Findings: Good quality care was facilitated by *Fostering connection, Providing flexibility for women and midwives* and *Having a sense of choice and control.* Barriers to the provision of quality care were: *Contested care* and *Needing more preparation for unexpected outcomes.*

Discussion: Midwifery-led continuity of carer models shift the power dynamic from a hierarchical one, to one of equality between women and midwives facilitating informed decision making. There are ongoing issues with collaboration between general practice, obstetrics and midwifery. Maternity services have a responsibility to address the challenges of contested care and to prepare women for all possible outcomes to ensure women experience the best quality care as described in the Framework.

Conclusion: The QMNC Framework is a useful tool for exploring the facilitators and barriers to the widespread provision of midwifery-led continuity of care.

Keywords

continuity of care; birth; health services; quality of health care

Introduction

Midwifery-led continuity of care is beneficial to women and babies[1]. Benefits include a reduction in all obstetric interventions including caesarean sections and a reduction in preterm birth[1,2]. Additionally, women report greater levels of satisfaction with care[3,4] and midwives report better job satisfaction compared to providing standard care that is usually fragmented with the woman seeing a number of different care providers (midwives and obstetricians) throughout her pregnancy, birth and early parenting period[5,6]. Furthermore, these benefits can be achieved at a reduced cost to the health service[7]. As such, midwifery-led continuity of care has been recommended by the Australian Health Minister's Advisory Council to be made available to childbearing women nationally[8,9].

Currently, it has been estimated that only 10% of women have access to continuity of midwifery care in Australia[10]. For the purpose of this paper, continuity of care is defined as care provided by one midwife or a small group of midwives (two to four) through early pregnancy, labour, birth and the early postnatal period[11]. We will refer to this as midwifery-led continuity of care or midwifery group practice (MGP).

It is evident that there have been issues with the wide spread implementation of midwifery-led continuity of care in Australia[12]. Whilst toolkits exist[13] that assist midwifery managers to understand the organisational aspects of implementing this model of care, we wanted to explore the essential qualities of midwifery-led continuity of care models as described in the Quality Maternal and Newborn Care (QMNC) Framework developed by Renfrew et al[14].

The QMNC Framework was devised from, and tested by, the expert opinion of 35 researchers with experience in low, middle and high-income countries together with the review of a meta synthesis of qualitative studies of women's experiences[14]. The highest-level evidence was derived from two sources: The Cochrane Pregnancy and Childbirth Group and the Partnership for Maternal, Newborn

and Child Health Review[14]. Analysis of evidence from these internationally recognised rigorous sources informed the QMNC Framework which has five components; practice categories, organisation of care, values, philosophy and care providers (Figure 1). The authors propose the Framework can be used to assess quality of care; plan workforce development, resource allocation, an education curriculum; or identify evidence gaps for future research[14]. A further call was given for research that would identify the facilitators and barriers to implementing midwifery-led continuity of care as reflected in the QMNC Framework[15].

Figure **{** SEQ Figure * ARABIC **}**. Quality Maternal Newborn Care Framework

In the United Kingdom (UK) the QMNC Framework has already been used to map and evaluate midwifery-led antenatal care in a systematic review[16]. This review has provided the foundation for future evaluations of models of care using the Framework. Another study examined the feasibility of using the QMNC Framework initially as a topic guide for focus groups of service users (pregnant women and mothers) and service providers (midwives and obstetricians) in the UK[17]. In the study by Symon et al. [17] the findings were mapped back to the Framework, which was found to be a useful tool in evaluating models of care in two Scottish health boards. The authors concluded that adapting the Framework enabled them to understand 'what works for whom and why' in different models of care and that this is a necessary step in expanding or replicating the most effective models of care[17]. For the purpose of our research, the QMNC Framework will be used to explore the qualities of midwifery-led continuity of care in Australia (known as the MiLCCA study). We will identify the facilitators and barriers to the implementation and expansion of midwifery-led continuity of care.

Setting:

This study was undertaken at two distinct Australian sites. The first was a large tertiary referral hospital in a metropolitan setting that has approximately 5,500 births per year and provides

midwifery-led continuity of care to approximately 10% of childbearing women. The second was a rural maternity service that has only 250 births per year and offers midwifery-led continuity of care to 100% of childbearing women. We chose a metropolitan and rural site as they represent the diversity of Australian maternity care settings and serve as useful examples for other similar sites that wish to implement MGP in the future.

The two study sites organised care slightly differently. The metropolitan site serves a population of just under 1 million people. Their midwifery-led continuity of care practice has 16 full time equivalent midwives working in pairs. Each midwife provides care to a caseload of 35 women per year. The practice includes antenatal care provided primarily in the woman's home, or in the hospital setting when required. Midwives are on call for their caseload of women's labour and birth with a reported 80% of women having a known midwife present at the birth. Women are discharged home as early as possible after the birth (minimum hospital stay is four hours) with the midwife providing postnatal care in the woman's home on a daily basis until seven days postpartum. This hospital has midwifery-led continuity of care listed as an ongoing model of care in the Maternity Care Classification System (MaCCS): Model of Care Report[18].

The second site is a level 3 maternity service restricted to providing care to women and babies who are low risk at term. This rural and remote hospital, is a five-hour drive from the nearest tertiary hospital setting and serves a population of approximately 30,000 residents that spans a vast distance of nearly 200,000 square kilometres. The maternity service relies on a large number of "fly in fly out" health care providers. Within the last five years the hospital had a clinical redesign to provide midwifery-led continuity of care to all women in the region. Some will need transfer to the tertiary referral hospital, and some Aboriginal women choose to access the local Aboriginal Health Service for antenatal care. A small number of women choose shared care with a private obstetrician in the nearest large city. The majority of women access the midwifery-led continuity of care model. The

model has eight full time equivalent midwives who have a caseload of 30-35 women per year. The midwives provide antenatal care in the hospital clinic, are on call for women's labour and birth on weekdays and work shifts for first and second on-call each weekend. The midwives provide postnatal care in the woman's home until six weeks postpartum. Half the workforce is made up of midwives with less than four years' post graduate experience, who are supported by the more experienced MGP midwives and the core midwifery staff. In both settings there is a dedicated MGP manager and both managers actively provide experiences for midwifery students in the models and employ new graduate midwives with an initial reduced caseload. These strategies assist with staff attraction to the model and workforce sustainability.

Outcomes from 2017, for women who receive MGP and those women who received standard fragmented care from hospital midwives was provided by the data managers at both sites. We chose not to report these statistics as we did not collect them, however they do reflect the outcomes reported in the systematic review by Sandall et al.[1] In summary they reflect a lower rate of obstetric intervention and an increase in spontaneous vaginal birth rates. The positive outcomes for women and babies from these two sites support the benefits of midwifery-led continuity of care, however, what is lacking is an understanding of *how* midwifery-led continuity of care makes a difference or what components of this care improve outcomes for women and babies.

Our study aimed to explore the qualities of midwifery-led continuity of care in Australia using an evidence-based Framework. Using the QMNC Framework we have identified barriers and facilitators to the provision of quality care in order to make recommendations for replication of exemplary models and expansion of MGP in other metropolitan and rural maternity services.

Methods

We used a qualitative descriptive approach[19] to explore the qualities of midwifery-led continuity of care and how these qualities may be replicated to scale up this model of care in Australia. The QMNC Framework[14] was used as a theoretical Framework to guide discussion in the focus groups and to analyse the data.

The following questions drawn from the QMNC Framework guided the research:

1. What components of the Framework are present in the MGP models?

   I. *Organisation of care;* What resources are available? Where is care provided and how available, accessible and acceptable is care?

   II. *Values;* How does care demonstrate respectful communication and acknowledge community knowledge? How is care tailored to the woman's circumstances and needs?

   III. *Philosophy;* How do care providers optimise and strengthen women's capacity, using interventions only when necessary?

   IV. *Care providers*; How do practitioners combine clinical knowledge and skills with interpersonal and cultural competence?

2. How can these components be replicated to expand the MGP models?

Data collection

Focus groups were conducted with service users (pregnant women and new mothers) and service providers, (midwives) in each setting. A topic guide was used with prompts from the QMNC Framework, however questions were open-ended and conversation between participants was encouraged. The first author (AC) travelled to the rural setting to collect data, while the second author (BC) collected data at the metropolitan hospital. Focus groups with service providers took place when all the MGP midwives were available after their regular weekly team meeting. Women were invited

to participate in the study via printed flyers handed out by midwives and digital flyers posted on social media sites specific to the local MGP. At each site, we were assisted by the MGP manager and midwives to recruit pregnant and postnatal women. The managers also booked rooms for us at the hospital for data collection. Focus groups for service users were conducted at a time mutually suitable to women, for example following a breastfeeding class, and the researchers who had to travel to each destination to collect the data. Participants chose a pseudonym in order to protect their identity and maintain confidentiality. Consent was obtained, the focus groups were audio recorded and the recordings were sent to a professional transcriber for verbatim transcription.

The topic guide contained the following questions:

Table 1 Topic guide

We chose to open with the positive question "tell us the best part of working in/ receiving midwifery-led continuity of care" as we wanted to avoid 'getting stuck in the problem' e.g. lack of access or system driven care that was evident in the Scottish study[17]. In order to provide balance, participants were also encouraged to discuss any negative aspects of the model.

Participants

The following participants attended focus-groups in the rural setting; Eight MGP midwives; five pregnant women (>36 weeks gestation); six new mothers (<3 months postpartum) who had been cared for by MGP. The following participants attended focus groups in the metropolitan setting; eight MGP *New Graduate Midwives* (NGM); four MGP *Experienced Midwives*; three pregnant women (>36 weeks gestation); eight new mothers (<12 months postpartum) who had been cared for by MGP. Demographics of the participants are provided in Tables 2 and 3.

Table 2 Demographic details of women

Table 3 Demographic details of midwives

Data analysis

We employed Braun and Clarke's[20] model of thematic analysis to analyse the focus group data. Following transcription of audio recordings, each team member was assigned a number of transcripts to code. This step involved reading and re-reading paper copies of transcripts and highlighting passages of interest in order to develop initial codes. Codes and themes were derived directly from the data and were, therefore, data-driven. Then three of the Australian researchers met to compare, contrast, discuss and develop the data into agreed codes and early themes.

The second author (BC) then entered all data into qualitative data analysis Software NVivo 11[21] and coded each transcript using the fifteen agreed codes. These were then developed into eight themes using a process of repeated reading and constant comparison between coded extracts and the whole data set. All four authors then reviewed and refined these themes, checking coherence of each theme and ensuring they reflected the data. RC then wrote a draft themes document using data excerpts to build findings. First author (AC) re-read the final draft of themes and used the visual depiction of the Framework to align the concepts with the components in the QMNC Framework which was then developed into the final findings.

Ethics

Ethical clearance was granted in June 2018, HREC reference number: HREC/18/XXX/44. Site-specific approval was granted, SSA reference number: SSA/18/XXX/261, SSA reference number: SSA/18/XXX/54 and ratified by the XXXX ethics committee, XXX ethics approval no. ETH18-2652.

Anonymity of participants was ensured by the assignment of pseudonyms for both women and midwives. Any identifying information has been removed from the data.

Findings

Five themes emerged from the data that described the qualities of midwifery-led continuity of care. These indicate the facilitators and barriers to providing good quality maternal and newborn care as described in the QMNC Framework. Good quality care was facilitated by *Fostering connection, Providing flexibility for women and midwives* and *Having a sense of choice and control.* Barriers to the provision of quality care are expressed in the themes: *Contested care* and *Needing more preparation for unexpected outcomes.* In the following section, findings of our study are mapped to components of the QMNC Framework. Framework components are indicated in ***bold italics***

Fostering connection

Women and midwives felt connected to one another as having ***continuity*** of care provided time for their relationship to develop. Women felt reassured that they could easily connect with their midwife via mobile phone in order to seek her advice or reassurance as this pregnant women stated:

> *I think it's great that they give you their mobile number… you can contact them 24/7 if you need to, if you're worried about anything* (Ellis, pregnant woman - rural).

Similarly, another woman expressed:

> *I had her mobile number through the whole pregnancy and afterwards. I could call her at anytime if I needed to…it was a sense of relief* (Sarah, new mother - metro).

Through ***continuity*** of care, the midwife was ***available, accessible and provided good quality care to women.*** Women particularly enjoyed the deep connection they felt with their midwife and this tended to reduce a lot of pregnancy-related anxiety:

> *I actually got food poisoning during my pregnancy… two o'clock in the morning… I just called [my midwife], freaking out, and she just told me, "It's okay. If [your symptoms change] then*

come to the hospital, but if not, then it's okay. Just go to sleep, and we'll reassess in the morning (Summer, new mother - metro).

A quick text message to the midwife was usually enough to allay the woman's fears, avoiding the need for her to go to hospital. This reduced unnecessary visits to hospital emergency departments or labour wards and demonstrates the appropriate ***division of roles and responsibilities based on need, competencies and resources***, as this woman identified:

It stops pregnant women coming into the hospital…you're able to resolve little issues like that with your midwife (Summer, new mother- metro).

Another woman described the importance of feeling connected:

Being able to just text [my midwife], even though I was in another country, and get that reassurance was great ... [but] if I hadn't been a part of caseload [I would be thinking] "Okay, do I need to try to find a hospital here? Do I wait until I get home?" Not only the home visits [were beneficial], but the constant link that you've got, even overseas (Rose, new mother - metro).

Midwives considered fostering connections as a means for creating equality and partnership with women, through the ***values*** of ***respect*** and ***community knowledge***. Emphasis was placed on respecting the woman's own knowledge and experience:

We're just two people; I come with my experience and you come with yours and together we can journey off (Rebecca, new graduate midwife - metro).

We can map these findings back to the concept of ***clinicians who combine clinical knowledge and skills with interpersonal and cultural competence.*** The midwife is acknowledging the woman's experiences together with the midwife's clinical knowledge.

Midwives identified that not wearing a uniform and providing antenatal care in the woman's home deepened their connection with the woman and fostered equality:

Especially when you're not wearing the uniform…it really helps the relationship. (Maddie, new graduate midwife - metro).

The location and nature of antenatal visits also contributed to working in partnership with women, ***making care accessible and acceptable*** from a socio-cultural perspective. This facilitated the development of a strong midwife-woman relationship:

You build a really good rapport [with women] when they are in their own environment. Getting to know them in their own environment before they give birth is so good, I think, for the both of us (Chloe, new graduate midwife - metro*).*

Women felt a strong connection with their primary midwife through ***continuity*** of care. They commonly referred to her to as '*My midwife',* indicating the deep connection they held:

Having the same midwife, who came to my house to visit, made a really safe space to ask questions. I felt like, when my midwife came to my house, she always stayed as long as [we needed for her to answer] the questions that I had. (Rose, new mother - metro).

This demonstrates how well MGP ***integrates services across community and facilities*** and ***strengthens women's capabilities.***

Fostering connection was also evident in the way midwives and women built on conversations. This involved the midwife bringing a topic up with the woman at an antenatal visit, but not needing to resolve the issue immediately. Midwives knew they would be able to revisit these issues at subsequent antenatal visits, as this midwife describes:

With that continuity, you can sometimes plant a seed and revisit it and revisit it…respecting what they're saying and what their wishes are (Sarah, midwife - rural).

Through the value of ***respect***, midwives could ***tailor care to the woman's needs*** through building on conversations, as this midwife's story demonstrates:

I've got a woman on my caseload who's been saying right from day one, "I'm having an epidural". I just kept saying, "Yeah, yep, no worries… if that's what you want, that's what you

can have… but if you want to talk about it, let's talk about it." We went through like being mobile and positions [in labour] and all that sort of stuff. She goes, "Okay, maybe I'll think about the epidural" (Sheila, midwife - rural).

This was part of ***optimising biological processes*** and using ***expectant management***.

Providing flexibility

Providing flexibility refers to the capacity for women to have ***care tailored to their circumstances and needs***. Women were able to receive antenatal care in the comfort of their own home or in a community clinic setting at a time convenient to them:

I'd only have to take out half an hour out of my work day, because I wouldn't have to drive [to the hospital] and park (Erica, new mother - metro).

A concept reiterated by this woman:

I was working during my first [pregnancy] and I worked until 5:30 some days. They'd schedule the appointments after 5:30… I wasn't having to take time off work (Kat, pregnant woman - rural).

Midwives recognised flexibility as one of the key benefits for women, and they enjoyed offering this to them:

I like being able to [see women] at home, being able to try and make appointments that work around their life, being able to involve their husbands (Maddie, new graduate midwife - metro).

Midwives felt that providing visits in the woman's home supported the ***promotion of normal processes:***

I think actually doing the antenatal home visits might make women feel that, "Oh I must be normal. I don't need to go to the hospital so maybe things should continue to be okay." (Naomi, midwife – metro).

Alternatively, some women found it more convenient to have antenatal visits in the midwives' rooms at the hospital. They appreciated seeing their midwife straight away and not having a long wait in the antenatal clinic:

> *I actually came here [to the hospital] for my visits… I didn't need to go downstairs [to the antenatal clinic]. I just came up… and caught up in one of the rooms, because that suited my midwife and I better* (Amelia, new mother - metro).

Providing flexibility also benefitted midwives, many of whom were mothers themselves, as it allowed them to fulfill their own responsibilities as carers whilst maintaining a full caseload of women, as this midwife describes:

> *I arrange my appointments within school hours, obviously if there is a woman giving birth or you have to come in for an assessment, you arrange things according to that* (Charlotte, new graduate midwife - metro).

Flexibility is encompassed in the notion of ***practitioners who combine clinical knowledge and skills with interpersonal and cultural competence***.

Having time was another key aspect of flexibility in MGP that women valued very highly:

> *I think it makes you feel more relaxed. Like in [my previous pregnancy], I just felt like it was always like no one cared. It was rushed. It was just like a production line they put you in.* (Ellis, pregnant woman - rural).

Women were also impressed by the flexibility provided postnatally and felt reassured by having daily home visits from their midwife:

> *After giving birth I went home that day, it was just really nice to know that [the midwife would] be there the next morning and then the morning after that, and then the morning after that* (Sarah, new mother - metro).

A sense of choice and control

Having a sense of choice and control encompassed women's capacity to make informed-decisions. Women described feeling supported and respected in their decision-making process:

> *It was very much led by what I wanted… which makes me feel really respected* (Claire, pregnant woman – rural).

Several midwives reiterated the notion that they respected women's right to make decisions regarding their own pregnancy and parenting choices. These midwives took a philosophical position that ***strengthened women's capabilities****:*

> *…Respecting the woman's decision, even though we might not agree with it sometimes* (Kate, midwife - rural).

When women trusted their midwife, it facilitated their sense of choice and control:

> *I found that just that building of trust with one or maybe two people really helped in labour, because I was just so comfortable [with my midwife] and it's someone that you know. It's not a stranger in there with you* (Claire, pregnant woman - rural).

Women described how their midwives had excellent ***clinical knowledge and skills*** that supported their confidence in having a sense of choice and control:

> *My midwife seemed to have an answer for everything. If she didn't, she said, 'I'll ask this person or that person, or I'll get you a consultation'* (Rose, new mother - metro).

Women discussed how well they were prepared for labour and birth from the antenatal care provided by the midwife as discussed here:

> *They're always available and if they were busy they would let you know. "I'm busy, can I ring you back?" They were always not dismissive if you did have a question even if it was inconvenient* (Marie, new mother - rural).

Midwives reflected that spending a substantial amount of time with women in pregnancy was an investment that paid off when caring for them in labour, promoting ***expectant management*** as this midwife described:

> *In previous models that I've worked in... You're actually trying to get to know somebody during [their labour and] birth... So [in MGP] when you're in with them…they're just sort of like, getting on with it, and focusing on their birth… they trust you and they're looking to you for confirmation or reassurance* (Sarah, midwife - rural).

Women also described how the care they received from a ***competent workforce***, together with having a known midwife through ***continuity***, impacted on their emotional state during labour:

> *There were a lot of unknowns taken out of the equation. I had a really good idea of where I was going to be, who was going to be there, what was going to happen… I think my frame of mind about the birth was therefore really positive from the start…I think that made a huge difference to the outcome that I had in the end, going into it without fear* (Erica, new mother - metro).

Midwives felt the benefits of ***strengthening women's capabilities*** extended beyond labour and birth, also impacting the transition to parenthood:

> *When they leave at the end of it and they feel confident going into parenthood, I think that's really nice* (Sarah, midwife - rural).

The themes presented thus far were all facilitators of good quality maternal and newborn care. The following section describes the barriers to quality care that were identified.

<u>Contested care</u>

Contested care is a barrier to the appropriate ***division of roles and responsibilities based on need, competence and resources.*** Examples of contested care identified were a delay in referral of women to the continuity of carer model by General Practitioners (GPs) and instances where midwives and

hospital obstetricians disagreed about the best plan for the woman's care. In the rural setting, midwives encountered issues with working alongside GPs:

> *It's been an ongoing battle from the beginning with getting the GPs to refer to us at an early stage (*Mae, midwife - rural)

Likewise, women in the metropolitan setting also described issues with GPs not referring to the model:

> *I started hearing about caseload before we even got pregnant, through friends. I was like, "Yeah, we want to be a part of that and I asked my GP about it. My GP was like, "No, go to the clinic". He basically just dismissed it* (Rose, new mother - metro).

Midwives worked hard to promote normal processes and use ***expectant management***, ***using interventions only when indicated*** despite significant pressure from obstetricians to carry out interventions that the midwife described as unnecessary. In the following vignette, a rural midwife recounted the obstetrician coercing a woman into having a caesarean for a suspected large for gestational age baby:

> *I was in the room when the doctor was talking to her, and even I would have had a caesarean with the graphic, graphic spiel on shoulder dystocia. It was horrendous... She really didn't go too far into the risk factors of caesarean, I noticed. It was more about the shoulder dystocia. Anyway, [the woman] agreed [to a caesarean]. Which, I was gutted about, but I didn't say anything* (Tess, midwife - rural).

Contested care was particularly problematic for midwives working in a rural area where locum obstetricians regularly changed. Midwives in this setting worked hard to advocate for women:

> *We have got a new obstetrician …[whose practice is] a bit challenging, because she's doing much more obstetric [intervention]. That's been a bit of a challenge, we've had to sort of step up… and really advocate for our women, more so than what we normally would* (Sheila, midwife - rural).

Some women noticed the tension between midwives and obstetricians:

> *I think the doctor undermines the midwife a lot* (Ellis, pregnant woman - rural).

When care was contested, women tended to feel caught in between the midwife and obstetrician who offered conflicting advice:

> *[The obstetrician] was saying all this stuff [about needing a caesarean] and then when he left, my midwife, she said, "If you want to have a natural birth this time, because everything seems to be going fine as it is, then we're going to stick with that plan if that's what you want to do."* (Ellis, pregnant woman - rural).

Whilst some women appreciated the midwife advocating for her desire to pursue a physiological birth despite risks identified by the obstetrician, others favoured intervention because they felt concerned that midwives overly emphasised the expectation and promotion of physiological birth:

> *Well in my doctor's visit he [palpated] me and said, "Yes, you are having a big baby." So, of course, the midwife was like, "No no you're having eight pound max, nothing to worry about, you will be fine." And then he was like "Nine pounds six and a half". She just kept saying, "You only have babies as big as you can handle," but you always hear of people having Caesareans because the baby is too big. So I was just like, "Whoa." Doctor could tell it was a big baby… [The midwife] was just more like, "No, no, you will be fine." I thought maybe she was just saying that so I wasn't freaked out… maybe she just didn't want me to worry* (Marie, new mother - rural).

When care was contested, women found decision making more difficult and often felt torn between the obstetric and midwifery perspectives.

<u>Feeling unprepared for unexpected outcomes</u>

Some women felt unprepared for unexpected outcomes, such as being admitted to hospital antenatally. New mother Jessie described her experience:

So it was pretty typical pregnancy, and then at 34+5 my waters broke and so I was brought to hospital ... that's when it all became not typical and I think that the caseload midwifery didn't deal well with not typical (Jessie, new mother - metro).

Jessie felt that her midwifery care changed when her pregnancy became complicated, noticing a lack of ***continuity***:

[My midwife] came and visited me a couple of times on the antenatal ward. But it almost seemed like she didn't know what to do with herself (Jessie, new mother - metro).

Another woman who expected to be discharged home after giving birth described being totally unprepared for staying on the postnatal ward:

I was totally prepared to go home and then, I couldn't, and I was here [at the hospital] for four days. I was completely ill prepared… we realised that my husband had to go home. We were like, "What?" I was in shock. I'm like, "What do you mean, he has to go? I just had a baby…" When he had to go, that was my whole mental backup plan.... (Rose, new mother - metro).

Not all women had a negative experience when they developed complications. New mother, Amelia, described how supportive it was having her MGP midwife present during her vaginal breech birth demonstrating the importance of ***continuity*** when pregnancy becomes complicated:

Things didn't necessarily go to plan… knowing that the person [my midwife] who discovered that she was breech and then came with me for the ECV [external cephalic version]… just made it a lot easier when it came to the birth itself... (Amelia, new mother - metro).

Despite feeling unprepared for her stay on postnatal ward, Rose felt supported and reassured by the continuity of care provided by her midwife whilst in hospital:

She [my midwife] came back numerous times while I was here, and that was a positive (Rose, new mother - metro).

These findings have been mapped back to the QMNC Framework and demonstrate areas in which continuity enables a high quality of care. The findings also demonstrate barriers to quality care, including contested care, which appears to create a lack of appropriate ***division of roles and responsibilities based on need, competencies and resources*.** Although the midwives were using the ***philosophy of expectant management to optimise biological, psychological and cultural processes to strengthen women's capabilities,*** there were times when women felt they were not prepared for unexpected outcomes.

We will now synthesise all the findings with the QMNC Framework and other relevant literature to provide recommendations for the replication and expansion of the models in Australian rural and metropolitan settings.

Discussion

The concepts of, *Fostering connection, Providing flexibility and Having a sense of choice and control* that were identified in the findings were interrelated aspects of care. Through mapping these findings back to the QMNC, we found that these two midwifery-led continuity of care models replicated many of the qualities in the QMNC Framework. Two negative concepts were identified in the findings, *Contested care* and *Feeling unprepared for unexpected outcomes.* Midwives and organisations have a responsibility to address the challenges of *contested care* by improving inter-professional communication and collaboration. Additionally, women need to be adequately prepared for the possibility of unexpected outcomes such as medical intervention or extended hospital admission.

The QMNC Framework encompasses all the components of good quality maternity care that women and newborns need[22]. Although ***continuity*** is only one characteristic present in the organisation of care component, we found it to be a critical feature of the models we evaluated as it enabled women and midwives the capacity to foster connections through longer antenatal consultations, home visits

and the use of mobile phone contact. The value of connection between a woman and her midwife has been discussed extensively in the literature. Several authors have identified that midwifery-led continuity of care models facilitate the development of a midwife-woman relationship based on trust and respect, which improves women's experiences of childbearing[23-26].

Continuity of carer is defined as enabling a pregnant woman to build a relationship with a midwife (and a small team of midwives) through her childbearing journey with a named primary midwife who gives the majority of care during pregnancy, birth and the postnatal period[27]. The models of care evaluated in our study were continuity of carer models where one named midwife provided care to a specified number of women each year as their lead maternity care provider. Each midwife had a backup midwife from within the small team to cover any circumstances where the named midwife could not attend. The women in our study referred to their care provider as '*My midwife'* indicating their sense of belonging in the midwife-woman relationship. The connection evident between women and their MGP midwife is indicative of a workforce which ***combines clinical knowledge and skills with interpersonal and cultural competence***.

The theme *Providing flexibility* was mapped to care that is ***available, accessible and acceptable*** and ***integrated across the community and facilities*** through the ***organisation of care***. The midwives in our study found that the midwifery-led continuity of carer model provided them with flexibility that benefited both the women and midwives themselves. This was particularly so for midwives who were mothers as they could arrange their workload to occur primarily within school hours, reducing the need for out of home care. Similarly, another Australian study found midwives preferred working in models where they could organise their workload with flexible hours rather than shift work[28]. It should be noted that other aspects of flexible working hours were discussed in this paper, such as having good support at home are recommended for flexibility[28], however this was not one of our findings.

Midwives felt the continuity of carer model shifted the power dynamic from a hierarchical one, to one of equality through the ***value*** of ***respect, communication knowledge, and understanding.*** Emphasis was placed on respecting the woman's own knowledge and experience. The politics of power within medically dominated maternity care systems place those who possess the most technical knowledge (doctors) at the top of the hierarchy. The next tier consists of those with intermediate technical knowledge (midwives and other applied healthcare professionals); and at the bottom of the hierarchy are those considered to have the least technical knowledge - childbearing women. From this perspective, wherever the medical model is dominant in childbirth, doctors hold the greatest power over women's choices in childbearing and childbearing women the least[29]. In our study, there were several elements present in the midwifery-led continuity of carer models that facilitated a breakdown of such hierarchical power dynamics. Primarily, in midwifery-led continuity of care, midwives hold a ***philosophy*** of care that focuses on ***strengthening women' capabilities*** by encouraging and supporting women to make decisions based on evidence.

In addition, midwives in our study identified that not wearing uniform and providing antenatal care in the woman's home deepened their connection with the woman and fostered equality. Uniforms designate authority, which sets up a dynamic of novice and expert between a woman and midwife. When power relationships are equalised, women are more able to take responsibility for their health as they are less likely to defer to the 'expert'[30]. The ***values of respect and community knowledge and understanding*** are evident in our findings and we recommend midwives do whatever is in their capability to promote this concept including not wearing uniforms.

We found a negative aspect of the models evident through *contested care* where women did not gain access to the MGP as their general practitioner did not refer them in a timely manner. The power struggles between maternity care providers (in the main midwives and doctors) have been described by others as the turf wars[31]. "Turf wars" are not conducive to providing the care women and newborn

need. It has been proposed in other settings with MGP that a named obstetrician be available for consultation and referral as necessary[32]. Having a named obstetrician builds relationships of trust between the midwives and the obstetricians they are working alongside particularly when midwives are newly graduated[33]. This demonstrates good quality care through appropriate ***division of roles and responsibilities based on need competencies and resources***.

Providing care to women in their own homes both during the antenatal and postnatal periods provided flexibility to both the woman and the midwife. The midwives who provided care in the community in our study worked within the ***philosophy of strengthening women's capabilities*** and practised ***expectant management*** and these qualities are seen as necessary to providing good quality maternal care[14,15]. Organising care around the needs of the mother rather than the needs of the organisation is the essence of woman centred care. An early study by Hunter et al.[34] identified that hospital based midwives have different ideologies to community midwives. Community midwives were more likely to work according to a 'with woman' philosophy that was characterised by an individualised approach to care and a belief in the normal physiology of childbirth[24]. Allowing midwives to work around the needs of the woman through flexible work arrangements in a setting that is easily accessible to both makes the organisation of care ***available, accessible and acceptable*** and ***integrated across the community and facilities.***

The philosophy of ***strengthening women's capabilities*** was evident through use of mobile phone technology and texting. Women appreciated being able to send a quick text message to the midwife to ask questions about their concerns, rather than having a consultation at the hospital. This often allayed the woman's fears, demonstrating the value of ***communication and tailoring care to women's needs.*** Providing midwives with mobile phones and laptops or access to e-medical records fosters connection and trust and, in our study, reduced hospital admissions.

Women reported that midwives promoted their sense of choice and control. Women believed their midwife provided the information they required to make informed decisions, demonstrating a ***competent workforce***. When the midwife was unable to provide an answer, she would seek collaboration with an obstetrician. This demonstrates an appropriate ***division of roles and responsibilities based on need, competencies and resources.*** An analysis of choice and control in childbirth found women gained a sense of control when they felt prepared[35]. Most of the women in our study felt well prepared for labour and birth through ***continuity*** and this ***strengthened their capabilities*** to make decisions and to manage their labour and birth. However, we found that some women did not feel prepared for unexpected outcomes.

The midwives were excellent at promoting a sense of choice and control however preparing women for unexpected outcomes was sometimes lacking. One woman described how unprepared she was to be separated from her husband during her admission to the postnatal ward. Our findings indicate the ***values of respect, communication, community knowledge and understanding*** need to be strengthened. It may be a challenge for some midwives to balance the promotion of normal physiological birth with a medical perspective[36]. Midwives need to practice a fine balance between advocating for women and contesting care. Midwives have been described as risk-negotiators and we found that midwives were trying to "protect" the women in MGP from being "risked" out of the program[37]. We would recommend midwives provide more open discussions about possibility of unexpected outcomes to ***strengthen woman's capabilities.***

This study is limited to the Australian setting and we acknowledge the participants were recruited with the assistance of the managers and midwives which may have influenced the data. The sample is small due to limited resources for the study, however we chose a rural and a metropolitan site that are seen as representative of other Australian Maternity services in the hope that our findings and recommendations will aid further implementation of midwifery-led continuity of care models.

Conclusion

Midwifery-led continuity of care models are the gold standard of care. The aim of our study was to discover the qualities from these models so they can be expanded and replicated. To answer this question, we used an evidence-based framework to evaluate the qualities of midwifery-led continuity of care models in two very different settings in Australia. We found that the positive elements of fostering connection, providing flexibility and providing a sense of choice and control are easily mapped back to reflect quality maternal care. From our analysis of the findings mapped back to the QMNC Framework we provided some recommendations for replication in similar settings. The challenges are to address how best to deal with contested care and to prepare women for unexpected outcomes using the ***values of respect and communication.***

Acknowledgements

This study would not have been possible without the assistance of the Maternity Unit Managers (MUMS) at both sites, who were champions on the ground organising women and midwives to attend our focus group discussions. We would also like to extend our gratitude to the women and the midwives who took the time to attend our focus groups. Finally, we would like to acknowledge the UTS Faculty of Health who provided an early career researcher seed-funding grant to support this study.

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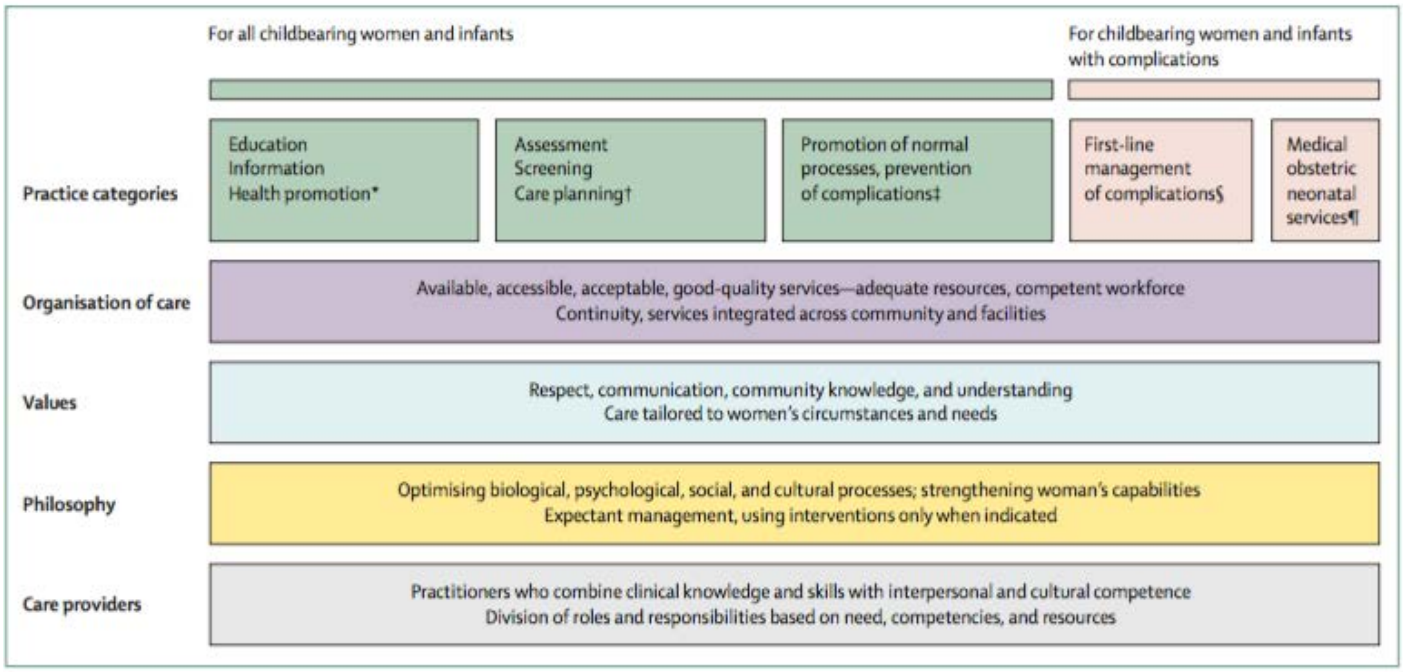
Figure 1 QMNC Framework



Topic Guide

Topic guide for focus group with Midwives:	Topic guide for focus group with Mothers:
- What is/was the best part about working in the MGP? - Tell me about how you tailor care to women's needs? - Tell me about how you ensure the care you provide is respectful? - How do you promote the normalcy of pregnancy and birth? - How do you strengthen the capabilities of mothers? - Tell me about what happens when women need to see a Doctor for any reason during their pregnancy? - Tell me about your midwifery knowledge base and how you answer women's queries? - As part of the Midwifery Group Practice, tell me how you cover the following topics when providing care: Health promotion such as promotion of breast feeding? Screening such as adequate feedback on women's blood results? Care planning such as a birth plan and how women will manage labour? - What happens when women develop complications? - How is/was the care you provide organised? E.g. in the woman's home, at the hospital clinic, at a community clinic (accessibility) -Tell me about the skills and knowledge you possess as a midwife - Prompts from the framework Is care easily accessible? Of high quality? Is the model adequately resourced e.g. enough time with the woman?	- What was the best part about being cared for in the MGP? - Tell me about the midwife and whether the way she provided care was respectful? - Tell me about how the midwife tailored care to your needs? - What kind of care did you receive that promoted the normalcy of pregnancy and birth? - What kind of care made you feel that your capabilities as a mother were strengthened? - Tell me about the experience of having to see a Doctor for any reason and when this happened? - Tell me about the midwife's knowledge base and how she answered your queries? - As part of the Midwifery Group Practice, tell me how the following topics were covered by the midwife who provided your care: Health promotion such as promotion of breast feeding? Screening such as adequate feedback on your blood results? Care planning such as a birth plan and how you will manage labour? What happens if you develop/developed complications? - How is/was the care you received organised? E.g. in your home, at the hospital clinic, at a community clinic (accessibility) - Tell me about the skills and knowledge of the midwife -Prompts from the framework Is care easily accessible? Of high quality? Is the model adequately resourced e.g. enough time with your midwife?